## AMENDMENTS TO THE CLAIMS:

Claim 1.        (Currently amended) A connection apparatus for a public network switching system ~~which serves user terminals~~, the switching system having a first plurality of line ports to which a plurality of user terminals are connected, a second plurality of line ports, a first plurality of trunk ports to which a plurality of Internet lines are connected, and a second plurality of trunk ports, the apparatus comprising:

a switching unit having a plurality of diverging ports adapted for connection to said second plurality of trunk ports ~~connected to the switching system~~ and a plurality of converging ports adapted for connection to said second plurality of line ports ~~a plurality of internet lines~~; and

a control unit responsive to ~~for receiving~~ a request signal from ~~of~~ one of said user terminals for ~~and~~ establishing in said switching unit at least one connection specified by said request signal ~~a set of branch connections~~ between one of said diverging ports and at least one ~~ones~~ of said converging ports ~~corresponding to the internet lines specified by said request signal~~,

said public network switching system establishing a connection between said one diverging port and ~~being connected through a connection to~~ said one user terminal and at least one connection between said second plurality of line ports and said plurality of trunk ports corresponding in number to said at least one connection established in said switching unit ~~system~~.

Claim 2.        (Canceled).

Claim 3.        (Currently amended) The connection apparatus of claim 1, wherein each of

said plurality of converging ports includes a multiplexer for multiplexing a plurality of user

signals into a signal for transmission to one of said Internet ~~internet~~ lines.

Claim 4.        (Currently amended) The connection apparatus of claim 3, wherein each of

said plurality of converging ports further includes a demultiplexer for demultiplexing a signal

from said one Internet ~~internet~~ line into a plurality of signals for application to said diverging

ports.

Claim 5.        (Original)  The connection apparatus of claim 3, wherein said multiplexer is

configured to operate in a TCP/IP protocol mode.

Claim 6.        (Original)  The connection apparatus of claim 4, wherein said demultiplexer is

configured to operate in a TCP/IP protocol mode.

Claims 7 and 8.        (Canceled).

Claim 9.        (Currently amended) The connection apparatus of claim 3, wherein each of

said plurality of diverging ports includes a first line interface unit for interfacing the

switching unit to said switching system and each of said converging ports further includes a

second line interface unit for interfacing the multiplexer to said one Internet ~~internet~~ line.

Claim 10.        (Original)  The connection apparatus of claim 9, wherein said second line

interface unit is in compliance with communication protocol and transmission speed of one of

said user terminals.

Claim 11.       (Currently amended) The connection apparatus of claim 9, wherein said

second line interface unit is configured to interface the demultiplexer to said one Internet

~~internet~~ line.

Claim 12.       (Original)  The connection apparatus of claim 1, wherein said control unit

comprises:

a phone number memory for storing a plurality of phone numbers; and

a processor for determining whether a phone number contained in said request signal

·coincides with one of said phone numbers stored in said phone number memory and

establishing said set of branch connections if the phone number coincides with one of the

stored phone numbers.

Claim 13.       (Original)  The connection apparatus of claim 12, wherein said control unit

further comprises an ID/password memory for storing a plurality of user identifiers and user

passwords, and wherein said processor is configured to:

determine whether a user identifier and a user password contained in said request

signal coincide with one of the user identifiers and one of the user passwords stored in said

ID/password memory if the phone number contained in said request signal does not coincide

with any of the stored phone numbers, and

establish said set of branch connections if the user identifier and the user password

contained in the request signal coincide with one of the stored user identifiers and one of the

stored user passwords.

Claim 14.      (Currently amended) The connection apparatus of claim 13, wherein said

processor is configured to:

determine whether the phone number contained in said request signal coincides with a

phone number which is denied access to the Internet ~~internet~~ lines, and

establish said set of branch connections if the phone number contained in said request

signal does not <u>coincide</u> ~~coincides~~ with said phone number which is denied access to the

Internet ~~internet~~ lines.

Claim 15.      (Currently amended) A connection apparatus for a public network switching

system which serves user terminals via a plurality of ADSL (asymmetric digital subscriber

line) modems, <u>said switching system having a first plurality of line ports to which said ADSL</u>

<u>modems are connected, a second plurality of line ports, a first plurality of trunk ports to</u>

<u>which a plurality of Internet lines are connected, and a second plurality of trunk ports,</u> the

apparatus comprising:

a switching unit having a first plurality of diverging ports <u>adapted for connection to</u>

<u>said second plurality of trunk ports</u> ~~connected to the switching system~~, a second plurality of

diverging ports <u>adapted for connection</u> ~~connected~~ to said ADSL modems, and a plurality of

converging ports adapted for connection to <u>said second plurality of line ports</u> ~~a plurality of~~

~~internet lines~~; and

a control unit <u>responsive to</u> ~~for receiving~~ a request signal <u>from</u> ~~of~~ one of said <u>ADSL</u>

modems for user terminals and establishing in said switching unit at least one first connection

a first set of branch connections between one of said first plurality of diverging ports and at

least one ones of said converging ports corresponding to the internet lines specified by said

request signal and at least one a second connection set of branch connections between one of

said second plurality of diverging ports and said at least one ones of said converging ports,

said public network switching system establishing a connection between said one

ADSL modem and said one of said first plurality of diverging ports and at least one

connection between said second plurality of line ports and said plurality of trunk ports

corresponding to said at least one first connection established in said switching unit one of the

first plurality of diverging ports being connected through a connection established in said

switching system to one of said ADSL modems associated with said one user terminal from

which said request signal is received.


Claim 16.       (Canceled).


Claim 17.       (Currently amended) A communication system comprising:

a public network switching system having for establishing a connection between a

first plurality of line ports to which a plurality of user terminals are connected, and a first

plurality of trunk ports to which a plurality of Internet lines are connected, and a second

plurality of trunk ports and a second plurality of ports in response to a request signal from one

of said plurality of user terminals;

a switching unit having a plurality of diverging ports connected to said second

plurality of trunk ports of said switching system and a plurality of converging ports connected

to a second plurality of line ports adapted for connection to a plurality of internet lines; and

a control unit responsive to a said request signal from one of said user terminals for

establishing in said switching unit at least one connection a set of branch connections

between one of said diverging ports and one ones of said converging ports corresponding to

the internet lines specified by said request signal between one of said diverging ports and at

least one of said converging ports,

said public network switching system establishing a connection between said one

diverging port and being connected to said one user terminal, and at least one connection

between said second plurality of line ports and said first plurality of trunk ports corresponding

to through said at least one connection established in said switching unit system.


Claim 18.        (Canceled).


Claim 19.        (Currently amended) A communication system comprising:

a plurality of ADSL (asymmetric digital subscriber line) modems;

a public network switching system having for establishing a connection between a

first plurality of line ports to which said ADSL modems are connected, and a second plurality

of line ports, a first plurality of trunk ports to which a plurality of Internet lines are connected,

and a second plurality of trunk ports in response to a request signal from one of said ADSL

modems;

a switching unit having a first plurality of diverging ports connected to said second

plurality of trunk ports of said switching system, a second plurality of diverging ports

connected to said ADSL modems, and a plurality of converging ports connected adapted for

~~connection~~ to <u>said second plurality of line ports</u> ~~a plurality of internet lines~~; and

a control unit <u>responsive to</u> ~~for receiving~~ a request signal <u>from one of said ADSL</u>

<u>modems for establishing in said switching unit at least one first connection between</u> ~~of~~ one of

said ~~user terminals and establishing in said switching unit a first set of branch connections~~

~~between one of said~~ first plurality of diverging ports and <u>at least one</u> ~~ones~~ of said converging

ports ~~corresponding to the internet lines~~ specified by said request signal and <u>at least one</u> ~~a~~

second <u>connection</u> ~~set of branch connections~~ between one of said second plurality of

diverging ports and said <u>at least one</u> ~~ones~~ of said <u>number of said</u> converging ports,

said <u>public network switching system establishing a connection between said one</u>

<u>ADSL modem and said one of said</u> ~~one of the~~ first plurality of diverging ports <u>and at least one</u>

<u>connection between said second plurality of line ports and said first plurality of trunk ports</u>

<u>corresponding to said at least one first connection established in said switching unit</u> ~~being~~

~~connected through a connection established in said switching system to one of said ADSL~~

~~modems associated with said one user terminal from which said request signal is received~~.


Claim 20.        (Canceled).


Claim 21.        (Currently amended) A method of communication for a public network

switching system ~~which serves user terminals~~ by using a switching unit<u>, said public network</u>

<u>switching system having a first and second plurality of line ports, and a firs and second</u>

<u>plurality of trunk ports, and said switching unit</u> having a plurality of diverging ports

~~connected to the switching system~~ and a plurality of converging ports<u>, wherein a plurality of</u>

<u>user terminals are connected to said first plurality of line ports and a plurality of Internet lines</u>

connected to said first plurality of trunk ports ~~adapted for connection to a plurality of internet lines~~, the method comprising ~~the steps of~~:

connecting said plurality of diverging ports to said second plurality of trunk ports;

connecting said plurality of converging ports to said plurality of line ports;

~~a)~~ receiving a request signal from ~~of~~ one of said user terminals via one of said first plurality of line ports;

~~b)~~ establishing, in said public network switching system, a connection between said one of said first plurality of line ports and one of said second plurality of trunk ports and at least one connection specified by said request signal between said second plurality of line ports and said first plurality of trunk ports ~~user terminal and one of said plurality of diverging ports in response to said request signal~~; and

~~c)~~ establishing, in said switching unit, at least one connection between one of said diverging ports and at least one of said converging ports corresponding to said at least one connection established in said public network switching system, said one of said diverging ports being connected to said one of said second plurality of trunk ports ~~system a plurality of connections in said public network switching system between ones of said plurality of converging ports and said plurality of internet lines according to phone numbers of internet service providers contained in said request signal~~;

~~d) establishing in said switching unit a set of branch connections between said one diverging port and said ones of said converging ports; and~~

~~e) repeating, the steps (a), (b) and (d) by skipping the step (c) if said plurality of connections are already established in said public network switching system.~~